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ABSTRACT

A syntactic analysis of the behavior of the Japanese causative is presented within the framework of Tree Adjoining Grammar (TAG). Three points are made: (1) certain aspects of the case-marking in the Japanese causative construction can be accounted for if it is assumed that the formation of the causative involves verb-movement, and that verb-movement in Japanese has the same properties as the Germanic verb-raising construction; (2) the restriction on case-marking known as the "double-o constraint" is strictly local in nature, in the sense that it can be made precise in the TAG framework; and (3) the behavior of the causative under passivization follows from the analysis presented. (MSE)

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by

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THE SYNTAX OF THE JAPANESE CAUSATIVE

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The Japanese causative construction has attracted attention over the course of many years because of its apparent ambivalence: it exhibits simultaneously traits associated with simplex and with embedding structures.* In this paper I shall present a syntactic analysis of the causative within the Tree Adjoining Grammar framework of Joshi Levy & Takahashi 75, Joshi 83, and Kroch & Joshi 85. I hope to demonstrate that this analysis captures the behavior of the Japanese causative while relying only on assumptions that have been shown to be well-motivated elsewhere. I will make three main points: firstly, certain aspects of the case-marking in this construction can be accounted for if we assume that the formation of the causative involves verb-movement, and that verb-movement in Japanese has the same properties as it does in the Germanic verb-raising construction; secondly, the restriction on case-marking known as the 'double-*o* constraint' is strictly local in nature, in a sense that can be made precise in the TAG framework; thirdly, the behavior of the causative under passivization follows from my analysis.

Sentences (1), (2) and (3) are examples of the Japanese causative construction.

(1) Mitiko-wa Taroo-ni ik-ase-ta.
TOP DAT go-CS -PAST
"Mitiko made Taroo go."

(2) Mitiko-wa Taroo-o ik-ase-ta.
TOP ACC go-CS -PAST
"Mitiko made Taroo go."

(3) Mitiko-wa Taroo-ni hon-o yom- ase-ta.
TOP DAT ACC read-CS-PAST
"Mitiko made Taroo read a book."

In (1) and (2) the embedded verb is intransitive. In this case, the embedded subject (which I shall refer to as the *causee*) can be marked either by the dative marker *ni* or the accusative marker *o*. As has often been noted, there are differences in meaning between (1) and (2): roughly speaking, in (1) the causation is permissive, in (2), coercive. In (3) the embedded verb is transitive, with an accusative-marked object. In this case the causee is always marked with the dative marker *ni*. This is the basis of the 'double-*o* constraint' originally formulated in Harada 73 and reformulated in Poser 83. When the embedded verb in a causative sentence is transitive, so that there is no room for variation in the case marking, the sentence is ambiguous between a permissive and a coercive reading.

Causatives can be passivized, as illustrated by (4) and (5):

(4) Taroo-ga Mitiko-ni ik-ase-rare-ta
NOM by go-CS -PASS-PAST
"Taroo was made to go by Mitiko."

(5) Taroo-ga Mitiko-ni hon -o yom -ase-rare-ta
NOM by book-ACC read-CS -PASS-PAST
"Taroo was made to read a book by Mitiko."

In both (4) and (5)—that is, with both transitive and intransitive embedded verbs—the passive causative is given a coercive reading. Note also that in both cases it is the *causee*—the embedded subject—that is promoted to matrix subject position. Passivization of the causative never results in promotion of the embedded object. We shall return to these points shortly.

Although in my examples I have split the verb up into morphemes, it is important to realize that it unquestionably forms a single morphological word. Further, its case arrays parallel more or less exactly other, morphologically simple, verbs: (1), (2) and (3) can be compared with (6), (7) and (8):

(6) Mitiko-wa Taroo-ni at -ta
TOP DAT meet-PST
"Mitiko met Taroo."

(7) Mitiko-wa Taroo-o korosi-ta
TOP ACC kill -PST
"Mitiko killed Taroo."

(8) Mitiko-wa Taroo-ni kore-o age -ta
TOP DAT this-ACC give-PST
"Mitiko gave this to Taroo."

It therefore seems reasonable to pursue the possibility that Japanese causative verbs are formed in the lexicon, and that they occur in simplex sentences. Such an analysis also offers the possibility of accounting for the 'double-*o* constraint', since there are no morphologically simple verbs in Japanese that assign accusative case to more than one NP.

Lexical analyses face serious problems, however. Japanese has a number of verbs which are semantically causative, but which are not the result of the productive affixation process that we have seen so far. Such verbs are often referred to as *lexical causatives*. Lexical causatives show some clear contrasts with *sase* causatives, which are hard to explain under the assumption that the *sase* causatives also are formed in the lexicon and occur in simplex sentences.

One such contrast occurs in sentences with adverbials. The scope of adverbials in sentences with *sase* causatives is ambiguous: it may include only the embedded clause, or it may include the matrix clause as well. An example is given in (9) (from Miyagawa 80):

(9) Taroo-wa Hanako-o /-ni san -kai tomar-ase-ta
TOP ACC/ DAT three times stop -CS -PST
"Taroo told Hanako once to stop, but for her
to do it on three occasions." OR
"Taroo told Hanako on three occasions to stop."

This type of scope ambiguity is found also in exceptional case-marking verbs in Japanese. An entirely parallel phenomenon in the verb raising construction of German and Dutch is described and analysed in Kroch & Santorini 87, who show that it constitutes evidence for an embedded structure that is maintained at all levels of the grammar.

Most significantly, there is the behavior of the passive. As mentioned above, in *sase* causatives the only NP that can be promoted to matrix subject in a passive is the causee. The complement object can never be promoted. This is unexpected in a lexical analysis, given that the accusative objects of ditransitive verbs in Japanese passivize freely—even the objects of ditransitives such as *miseru* (to show) which is clearly a lexical causative related to *miru* (to see). The lexical approach would predict that sentence (11) should be the passive of (10); but it is in fact ungrammatical.

(10) oya -wa kyoosi-ni sono kodomo-o osie -sase-ta
parents-TOP tutor -DAT that child -ACC teach-CS -PST
"The parents made the tutor teach that child."

(11)*sono kodomo-wa oya -ni kyoosi-ni osie -sase-rare-ta
that child -TOP parents-by tutor -DAT teach-CS -PASS-PST

The failure of the complement object to passivize is telling evidence against a lexical analysis of the Japanese *sase* causative.

A number of syntactic analyses of the causative construction have been proposed. Here I would like briefly to discuss two of the more recent proposals, the parallel structure analysis of Miyagawa 84 and the incorporation analysis of Baker 85. These analyses are particularly interesting because they relate the Japanese phenomena directly to similar constructions in other languages.

In Miyagawa's 1984 analysis causative sentences are associated simultaneously with two structures: one monoclausal, the other biclausal, as proposed for French and Spanish causatives in Zubizarreta 85. The binding principles apply to the biclausal structure, which provides an explanation for the impossibility of passives where the embedded object has been promoted to matrix subject position, as in the ungrammatical (11) above: in the biclausal structure the trace of the embedded object is contained within the embedded S, which constitutes its minimal governing category. There is nothing in this S to bind the trace, and the sentence therefore falls foul of principle A of the binding theory (anaphors must be bound within their minimal governing category).

The fundamental problem with the double structure analysis is that it describes the behavior of the causative but cannot be considered to explain it.

Neither Zubizarreta nor Miyagawa give any reason why certain principles, such as case-marking, apply to the monoclausal structure, while others, such as the binding conditions, apply to the biclausal structure. For this reason, I do not think that the additional machinery of double structure is sufficiently justified.

The second syntactic analysis that I want to touch on is the incorporation analysis of Baker 85. In this account the Japanese causative has a fully biclausal structure. The embedded verb moves out of the embedded S and is incorporated into the matrix verb—the causative morpheme—leaving behind a trace, in accordance with the Projection Principle. The cyclic movement of the embedded verb results in the transparency to government of the embedded S, and the complex verb is therefore able to assign accusative case to the embedded subject. This leaves the problem of how embedded objects pass the Case Filter. Baker argues that verbal traces cannot assign or transmit case. Instead, he first suggests that embedded objects have some kind of 'inherent' case, and then rejects this initial suggestion, finally proposing that the embedded verb *reanalyzes* with the head of its NP object before moving, where 'reanalysis' is described roughly as 'Noun Incorporation, but without the morphological incorporation.' There is, however, no independent evidence for non-morphological incorporation in this construction. When the head of an NP is incorporated, the NP no longer requires case; but the embedded object in a causative still takes the accusative marker *o*. Further, the embedded object may have a stack of nominal modifiers, as in (12):

(12) mitiko-wa taroo-ni zibun-no -otoosan-no -kusuri -o
TOP DAT self -POSS-father -POSS-medicine-ACC
nom -ase-ta
drink-CS -PST
"Mitiko made Taroo drink her father's medicine."

If *kusuri*, the head of the embedded object NP, is reanalyzed with the verb, its erstwhile modifier *zibun-no otoosan* will be left without case, and thus the sentence should be ungrammatical. One might perhaps pursue the possibility of reiterated reanalysis: in sentence (12) it would have to take place three times. However, Baker himself points out that even double incorporations are rare in any language, which makes this a very unattractive solution.

There are two generalizations to be made about case-marking in causatives. We have already noted the first: accusative marking of the causee is impossible if the embedded object is marked accusative. The second is that the case of the embedded object is completely determined by the case-assigning properties of the embedded verb. This can be demonstrated because a small number of verbs assign dative, rather than accusative case to their single object. When these verbs appear in a causative the embedded object must be assigned dative:

(13)a. taroo-wa hanako-ni /*-o at -ta
-TOP -DAT/*-ACC meet-PST
"Taroo met Hanako"

b. mitiko-wa taroo-ni hanako-ni /*-o aw -ase-ta
-TOP -DAT -DAT/*-ACC meet-CS -PST
"Mitiko made Taroo meet Hanako."

Neither of these generalizations can be captured under Baker's assumptions about the nature of case-assignment in the causative.

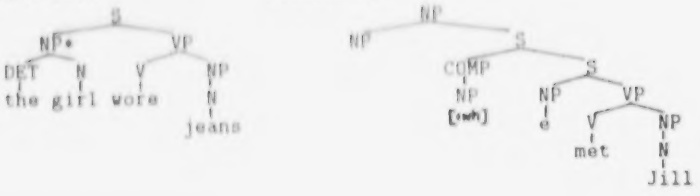
I should now like to outline my own analysis, which, as I have already mentioned, is carried out within the framework of Tree Adjoining Grammar. TAGs constitute a theoretically constrained formalism: as has been demonstrated elsewhere, they fall within the class of 'mildly context-sensitive grammars.' It is therefore of some interest in itself to discover whether a TAG is powerful enough to express a linguistically motivated analysis of this construction. There are more particular reasons, however, for using this formalism to analyse the Japanese causative. Firstly, it allows a direct comparison to be made with the Germanic verb-raising construction, since the analysis that I present here is extremely close to that given for Germanic in Kroch & Santorini 87. Secondly, this grammar defines a *domain of locality* that has been exploited elsewhere, in analyses of antecedent-trace relationships, for example, and that enables me to show that the 'double-*o* constraint' is local in a precise sense.

The basic units of a TAG are trees. A TAG defines a finite set of simple sentence elementary trees and an adjunction operation that produces complex sentences through the combination of simple sentences. Local relations are stated on elementary trees, which are of two types: Initial trees and Auxiliary trees. Initial trees correspond to sentences containing no recursive elements. Recursion is introduced through the adjunction of Auxiliary trees, which are constrained to be of a certain form: the frontier nodes of an auxiliary tree—the leaves—are all terminals except for one node, which must have the same label as the node at the root of the tree. A simple example may make this clearer. The trees used in the derivation of sentence (14) are given in (15). In order to derive the sentence, the auxiliary tree must be adjoined to the initial tree at the node marked with an asterisk. To clarify the effect of adjunction, I have drawn dotted lines round the part of the final structure that corresponds to the auxiliary tree.

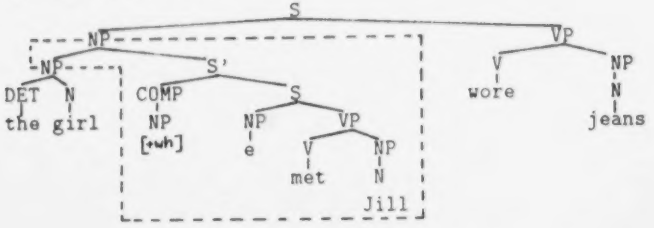
(14) The girl who met Jill wore jeans.

(15)

I(nitial) A(uxiliary)



Derived Structure:



The analysis of the Japanese causative involves only one complication of this picture. I make use of the extension of multi-component adjoining that was worked out in Joshi Levy & Takahashi 75 and used for the analysis of extraposition in Kroch & Joshi 86. In this extended system, instead of having auxiliary trees, we have auxiliary tree sets. Each tree belonging to the set is constrained in its form as before. The definition of adjunction can easily be altered to cover this extension.

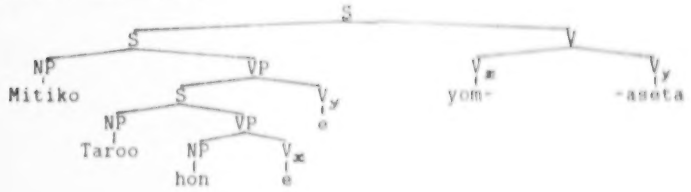
Now we can see the shape of the elementary trees that are to be used in the derivation of sentence (3), repeated here as (16) - ignoring, for a moment, the question of case-marking.

(16) Mitiko-ga Taroo-ni hon -o yom -ase-ta
NOM DAT ACC read-CS -PST
"Mitiko made Taroo read the book."

As before, the initial tree is the embedded sentence. Into this structure the trees in the auxiliary tree set are adjoined at the nodes marked with an asterisk.

I(nitial) A(uxiliary)

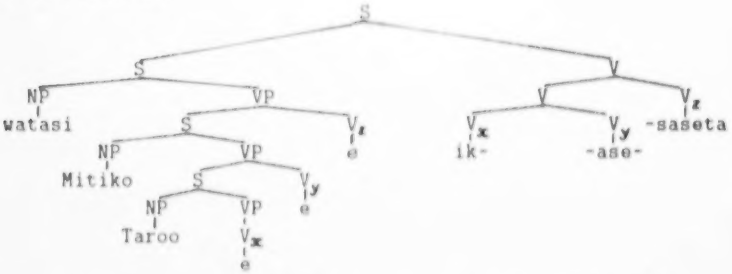
Derived Structure



'Double' causatives are derived similarly, except that of course two auxiliary tree sets are required. An example of the derived structure of a double causative is given in (17):

(17) watasi-wa Mitiko-ni Taroo-o ik-ase(-sase)-ta
I TOP DAT ACC go-CS -CS -PST
"I made Mitiko make Taroo go."

Derived Structure



As you can see, I am assuming that the movement of the verbal morphemes leaves traces, in accordance with the Projection Principle of Government Binding Theory. I also claim that these traces are able to transmit case to their arguments, thus accounting for the case-marking of the complement object. This is a standard assumption in most analyses of verb movement in Germanic, and avoids the problems that we have seen arise when the possibility of verbal traces assigning or transmitting case is ruled out.

Notice that the causative verb is syntactically single in the sense that it has a single V node ancestor. It is very tempting to think of this as crucial to an explanation of the 'double-*o* constraint:' that is, to take this constraint to amount only to the general rule that in Japanese single verbs assign only one accusative case. Since the causative complex is single in the sense just mentioned, this rule will apply here also.

Such an analysis could be instantiated in a TAG in the following way: each verb carries information identifying the argument to which it assigns structural acusative case. This information can be represented as a feature–value pair associated with the verb node. When a V node is immediately dominated by another

V node, it passes this information up to the mother node by feature-sharing. If more than one part of the verbal complex is assigning structural accusative there will be a conflict of feature values when adjunction takes place and the information is passed up to the dominating V node. This conflict will prevent successful adjunction, and the derivation will not go through.

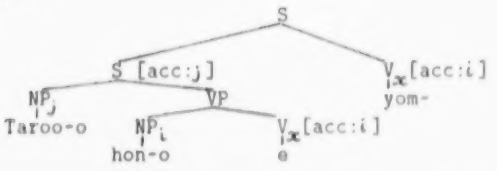
Such an approach faces a very serious problem, however. Japanese single verbs also assign at most one dative case. The view of the 'double-*o* constraint' outlined above incorrectly predicts the existence of a 'double-*ni* constraint,' that would rule out, for instance, causatives of ditransitive verbs, which, although awkward, are grammatical.

The TAG formalism suggests an alternative way to consider this phenomenon. Let us consider the trees that would be needed to generate the ungrammatical sentence in (18):

(18) *Mitiko-ga Taroo-o hon -o yom-ase-ta
NOM ACC book-ACC read-CS-PST
Intended reading: "Mitiko made Taroo read the book."

The initial tree that would be needed to generate this sentence would have to be of the form given below.

I(nitial)



If we were to adopt the approach I have just outlined, this tree would be well-formed—it is only when we attempt adjunction that the problem of conflicting feature values arises and rules out the derivation. I propose instead that we consider this tree ill-formed in itself and remove it from the grammar. This corresponds to a linguistic constraint which may be stated along the following lines—

> There may never be more than one NP assigned structural accusative in the domain of a verb.

—where here I take the "domain of a verb" in Japanese to be the S in which it occurs, in agreement with current analyses according to which V is the head of S in Japanese (see for example Fukui 86). Now the ungrammatical sentence (18) can never be derived because the grammar does not contain the relevant elementary trees. There is no need for information to be passed around the structure, and the 'double-*o* constraint' is strictly local.

Since this is a local rule, it should be preferred over one which requires information to be passed an indefinite distance through the structure, unless evidence

can be found for the necessity of the latter approach. In fact, the one class of sentences that might seem to constitute such evidence turns out, on closer inspection, not to challenge my approach. Consider (19):

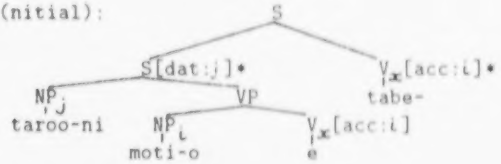
(19)*watasi-wa mitiko-o taroo-ni moti-o tabe-sase(-sase)-ta
I -TOP -ACC -DAT moti-ACC eat -CS -CS -PST
Intended reading: "I made Mitiko make Taroo eat rice cake."

This sentence contains two accusative-marked NP's—the 'topmost' causee and the complement object. It contrasts with the awkward but acceptable (20), where only the complement object is marked accusative:

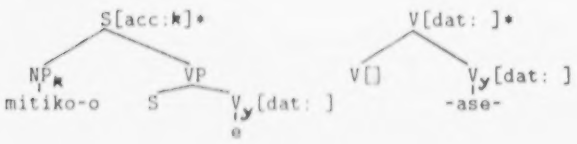
(20) watasi-wa mitiko-ni taroo-ni moti-o tabe-sase(-sase)-ta
I -TOP -DAT -DAT moti-ACC eat -CS -CS -PST
"I made Mitiko make Taroo eat rice cake."

The ungrammaticality of (19) is predictable in a system where information can be passed up the verbal cluster from daughter to mother and on up to an ancestor V node indefinitely far away. In such a system (19) will be ruled out in exactly the same way that (18) is ruled out: at the final adjunction a clash of feature values will arise on the root V node, and the derivation will not go through. The local constraint that I am proposing will not rule out (19), as can perhaps best be appreciated by looking at the elementary tree sets that are needed for its generation, given in (21):

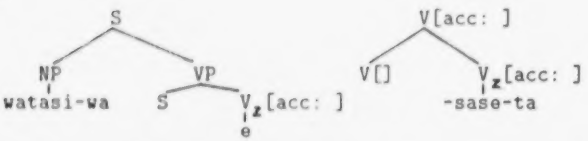
(21) I(nitial):



A1:



A2:



No single one of these tree sets seems to contain enough information to allow us to reject it as ill-formed: unlike the simpler case in (18), no single one of these

trees contains two NPs receiving structural accusative case. So here it appears that the local constraint is just not powerful enough to handle the data.

Further data show, however, that we do not want to appeal to the 'double-*o* constraint' to rule out sentences like (19). Consider the following set of sentences:

(22)a. watasi-wa mitiko-ni taroo-o ik-ase(-sase)-ta
I TOP DAT ACC go-CS CS PST

b. watasi-wa mitiko-ni taroo-ni ik-ase(-sase)-ta
I TOP DAT DAT go-CS CS PST

c. *watasi-wa mitiko-o taroo-ni ik-ase(-sase)-ta
I TOP ACC DAT go-CS CS PST

"I made Mitiko make Taroo go."

Contrary to what the powerful, feature-passing approach would predict, (22)c is ungrammatical in the reading given. (Even those who find (22)a and (22)b awkward report that (22)c is significantly worse.) Clearly it is not the 'double-o constraint' that is ruling out (22)c. But since this is so, it turns out that we no longer have any reason to suppose that it is the 'double-*o* constraint' that is ruling out (19): if we exclude from the inventory of elementary trees in the grammar all sets of the form of A1 in (21) above we will derive all and only the grammatical sentences in (22) and we will also rule out the ungrammatical (19). This allows us to maintain our local version of the 'double-*o* constraint,' since the only case that it could not handle is now taken care of.

Exactly what the linguistic reason is for the ill-formedness of tree sets like A1 is not yet clear to me, but the examples in (22) show that whatever produces this effect, it is independent of the 'double-*o* constraint.' From this we can conclude that the 'double-*o* constraint' is in fact a strictly local rule, requiring only information available within the minimal trees that are the basic elements of the TAG.

In this final section I should like to discuss the passive. I make the assumption that the causative morpheme assigns case to the causee across the S-boundary, in a way akin to the Exceptional Case Marking verbs of English. I make the further assumption that there are in fact two morphemes *sase*. One is associated with the 'permissive' reading, and assigns lexical dative case. The other is associated with the 'coercive' reading and assigns structural case, which is realized either as accusative or dative depending on the transitivity of the complement verb. The distinction between structural and lexical case allows us to account for the interpretation of the passive causatives. As mentioned earlier, passivized causatives always receive the 'coercive' interpretation. This suggests that the 'permissive' causative, which assigns lexical dative case, does not passivize. This is entirely consistent with the behavior of other verbs in Japanese that assign lexical dative: for example, the verbs *au* (to meet) and *katu* (to defeat) do not have corresponding passives.

The failure of the complement object to be promoted to matrix subject when the causative is passivized follows immediately from the biclausal structure that I have proposed. Under both lexical and syntactic accounts of the passive, the complement object is inaccessible. A particularly interesting comparison with Japanese in this respect can be made with Italian. Morphologically, the Italian causative is entirely parallel to its French equivalent, which is generally agreed to be biclausal:

(23)a. Il professore ha fatto leggere il libro agli studenti
the teacher has made read the book to-the students
"The teacher made the students read the book."

b. Le professeur a fait lire le livre aux etudiants
the teacher has made read the book to-the students
As above.

Nevertheless, I follow Zubizarreta 85 in claiming that the Italian causative is monoclausal. There are a number of pieces of evidence for such an analysis: the interested reader is referred to Zubizarreta 85 and to Santorini & Heycock 88. Here I restrict myself to drawing attention to the fact that, in striking and unexpected contrast to Japanese, the 'complement object' is promoted in the passive; the causee is promoted only when the causativized verb is intransitive.

(24)a. Questo libro e' stato fatto leggere a tutti gli studenti
this book is been made read to all the students
"This book was made to be read by all the students."

b. Gianni e' stato fatto partire
Gianni is been made leave
"Gianni was made to leave."

This pattern is the same one that is found in other simplex sentences: there does not seem to be any way of giving a plausible explanation of this under a biclausal analysis. The particular interest of the contrast of Japanese with Italian is that it shows that syntax and morphology may fail to match in more than one way: a complex syntactic structure may be mapped to a single morphological unit, as in Japanese, and a single syntactic unit may be mapped to a complex morphological structure, as in Italian.

I hope to have demonstrated that the Japanese causative is fully biclausal, despite the morphological integrity of the derived verb. Crucial evidence is provided by the interaction with the passive, where Japanese and Italian exhibit exactly complementary types of mismatch between syntax and morphology. I have given an analysis that aims to account for the syntactic behavior of the causative, restricting my assumptions to those that have been proved to be useful elsewhere, and employing the framework of Tree Adjoining Grammar, a well-defined formalism of limited power.

NOTES

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